



2009 Session

## **Exhibit 1**

**This exhibit is a booklet and it  
cannot be scanned therefore  
only the cover and table of  
content has been scanned to aid  
you in your research.  
The original exhibit is on file at  
the Montana Historical Society  
and may be viewed there.**

**Montana Historical Society  
Archives, 225 N. Roberts, Helena,  
MT 59620-1201  
Phone (406) 444-4774.**

Scanning by: Susie Hamilton

**Joint Board of Control  
Services Grant and Bond Program  
Annual Audit Report  
January 1, 2010 - December 31, 2010**

**Joint Board of Control  
Services  
Annual Audit Report  
January 1, 2010 - December 31, 2010**

**Executive Summary**



**JOINT BOARD OF CONTROL SERVICES**  
JOINT BOARD OF CONTROL SERVICES  
SERIALS PURCHASE PROGRAM  
2010 ANNUAL AUDIT REPORT  
SUBMISSION  
P. G. FRAZER, MPA  
BUDGET AND FINANCIAL

**MARY E. KELLY**

## Step 1: Application Summary

(All applicants must complete this form)

1. Name of Applicant(s): Flathead Joint Board of Control
2. Project Title: FJBC – Jocko K Canal Lining
3. Federal Tax Identification Number: 81-0439484
4. Type of Entity: Irrigation District
5. Type of Project: Permanent Canal Lining
6. Project Location: St. Ignatius, MT; T20N, R21W, Section 28; Lake County, MT.
7. State Senate District 6 & 50 State House District 12 & 15
8. Population Served by Project: Not Applicable
9. Number of Households served by Project: \_\_\_\_\_
10. Number of Farms or Ranches Served by Project: 4,600
11. Number of Acres Served by Project: 134,788 acres



# Montana State Legislature

2009 Session

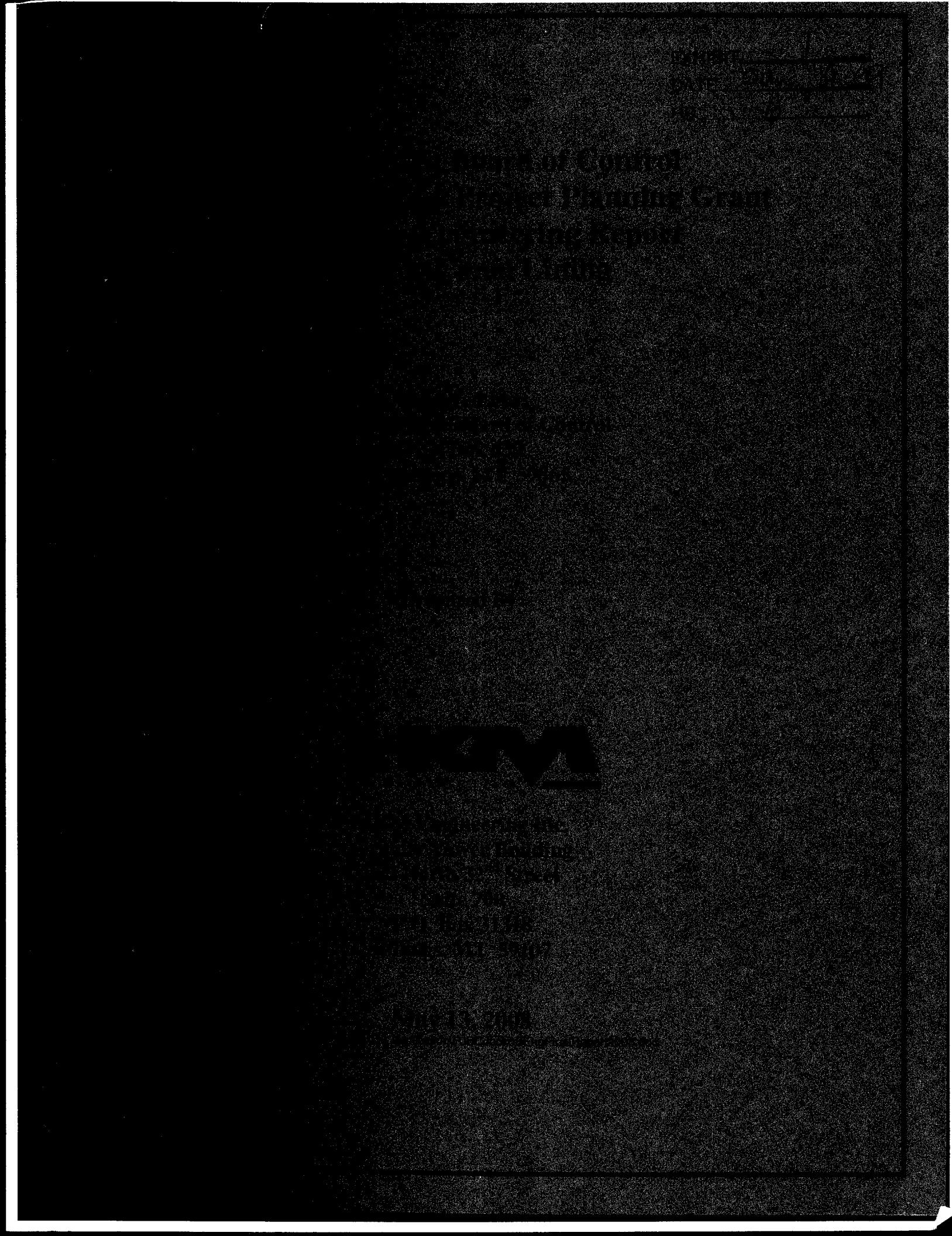
## **Exhibit 1**

**This exhibit is a booklet and it  
cannot be scanned therefore  
only the cover and table of  
content has been scanned to aid  
you in your research.**

**The original exhibit is on file at  
the Montana Historical Society  
and may be viewed there.**

**Montana Historical Society  
Archives, 225 N. Roberts, Helena,  
MT 59620-1201  
Phone (406) 444-4774.**

Scanning by: Susie Hamilton



## Table of Contents

EXECUTIVE SUMMARY .....	III
1.0 PROJECT IDENTIFICATION .....	1
1.1. Irrigation Project Description and Location.....	1
1.2. Locations and Description of the Management Area.....	5
1.3. Jocko Valley .....	10
1.3.1 Water Supply.....	10
1.3.2 Reservoir Storage and Water Distribution.....	12
1.3.3 Pumping .....	13
1.4. Proposed Canal Lining Project.....	14
2.0 PROJECT HISTORY .....	14
2.1. Project Need – Canal Seepage.....	14
2.2. Related Work to Date .....	15
2.3. Related Facilities, Programs, and Resources .....	21
3.0 GOALS AND OBJECTIVES FOR CANAL IMPROVEMENTS .....	21
3.1. Goals and Objectives.....	21
3.2. Quantitative Project Benefits.....	22
4.0 ALTERNATIVE ANALYSIS.....	23
4.1. Inventory & Field Review .....	23
4.1.1 Observed Canal Seepage Conditions.....	23
4.1.2 Instantaneous Peak Demand .....	23
4.1.3 Canal Cross Section and Hydraulics.....	24
4.2. Cost-Benefit Analysis.....	25
4.3. Other Irrigation System Alternatives .....	28
4.4. Preferred Alternative Benefits.....	29
5.0 PROJECT IMPLEMENTATION PLAN.....	29
5.1. Pond-Gard Canal Lining Construction Schedule:.....	30
5.2. Canal Shaping & Lining.....	30
5.3. Gravel Ballast .....	30
5.4. Liner Cost Estimate .....	31
6.0 SUPPORTING TECHNICAL DOCUMENTATION.....	31
6.1. Climate.....	31
6.2. Geology.....	33
6.3. Soils .....	33
6.4. Land Classification and Crop Mix .....	33
6.5. Land Ownership .....	34
6.6. Water Quantity (Hydrology) and Water Quality .....	34
6.6.1 Water Supply.....	34
6.6.2 Reservoir Storage and Water Distribution.....	35
6.6.3 Pumping .....	37
6.7. Assessments .....	38
6.8. Water Rights .....	38
6.9. Environmental Impacts, Threatened, Endangered and Sensitive Species .....	39

6.9.1	Wildlife.....	39
6.9.2	Plants .....	51
6.9.3	Fish .....	57
6.10.	Cultural Resources.....	70
6.10.1	Introduction .....	70
6.10.2	Future Heritage Resources Focus .....	70
7.0	SUMMARY, CONCLUSIONS, & RECOMMENDATIONS.....	70
7.1.	Summary and Conclusions.....	70
7.2.	Recommendations .....	71

### List of Tables

Table I.1:	Key Canal Capacities – Jocko division .....	6
Table I.2:	FIIP Reservoirs and Storage .....	8
Table II.1:	Instream Flows .....	17
Table II.2:	FIIP Fish Passage Facilities.....	20
Table IV.1:	Seepage Prevention Alternative Costs.....	25
Table IV.2:	exposed geomembrane lining system .....	25
Table IV.3:	Present worth of design alternatives .....	27
Table IV.4:	Seepage Prevention – Pros & Cons .....	27
Table VI.1:	Snow Courses for Runoff Forecasts .....	32

### List of Figures

Figure I.1	Watermaster Divisions .....	3
Figure I.2	FIIP Key Distribution Canals and Pumping Plants.....	7
Figure I.3	FIIP Storage Reservoirs.....	9
Figure I.4	FIIP Water Supply and Distribution Features-Jocko Division .....	11
Figure II.1	FIIP Intream Flow Sites.....	19
Figure IV.1	Typical Canal Lined Section .....	26
Figure VI.1	Areas of Special Wildlife Concern in the FIIP Area (adapted from BIA 2004a) ....	42

### List of Appendices

- Appendix A Jocko K Canal Map
- Appendix B Hydraulics
- Appendix C Pondgard Data & Specifications